

Food Services: One Solution Lukeloki and Results from Finland

11.5.2023

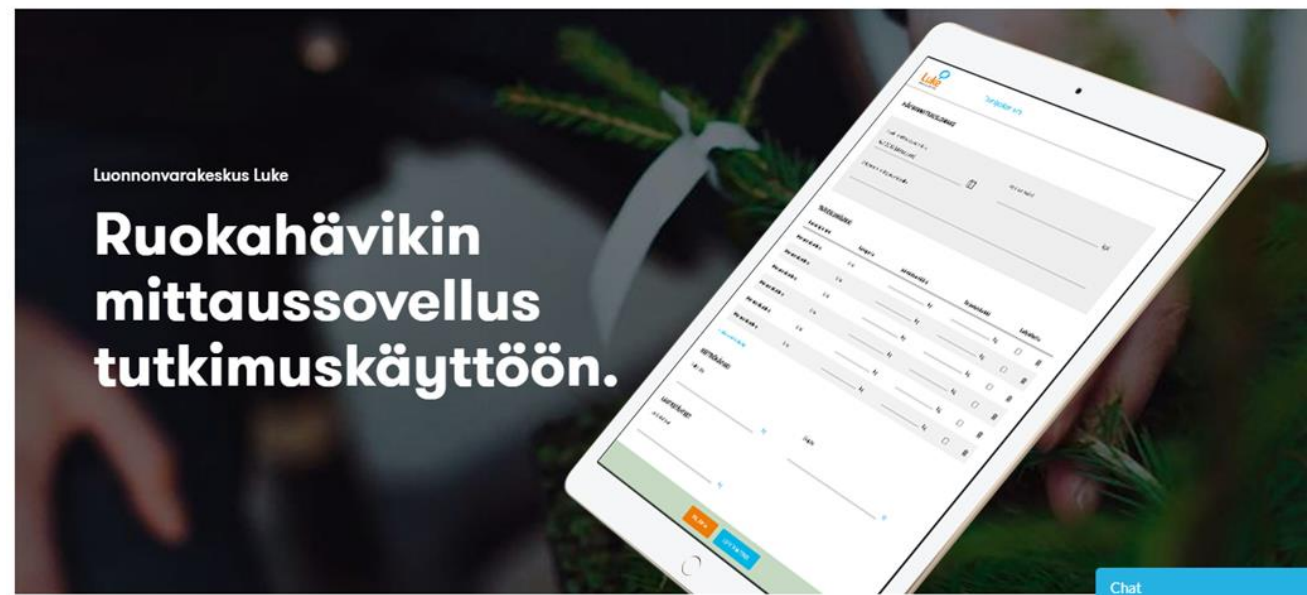
Kirsi Silvennoinen, Sampsa Nisonen



Luke has developed an online application *Lukeloki* for measuring food waste (FW) in food service companies

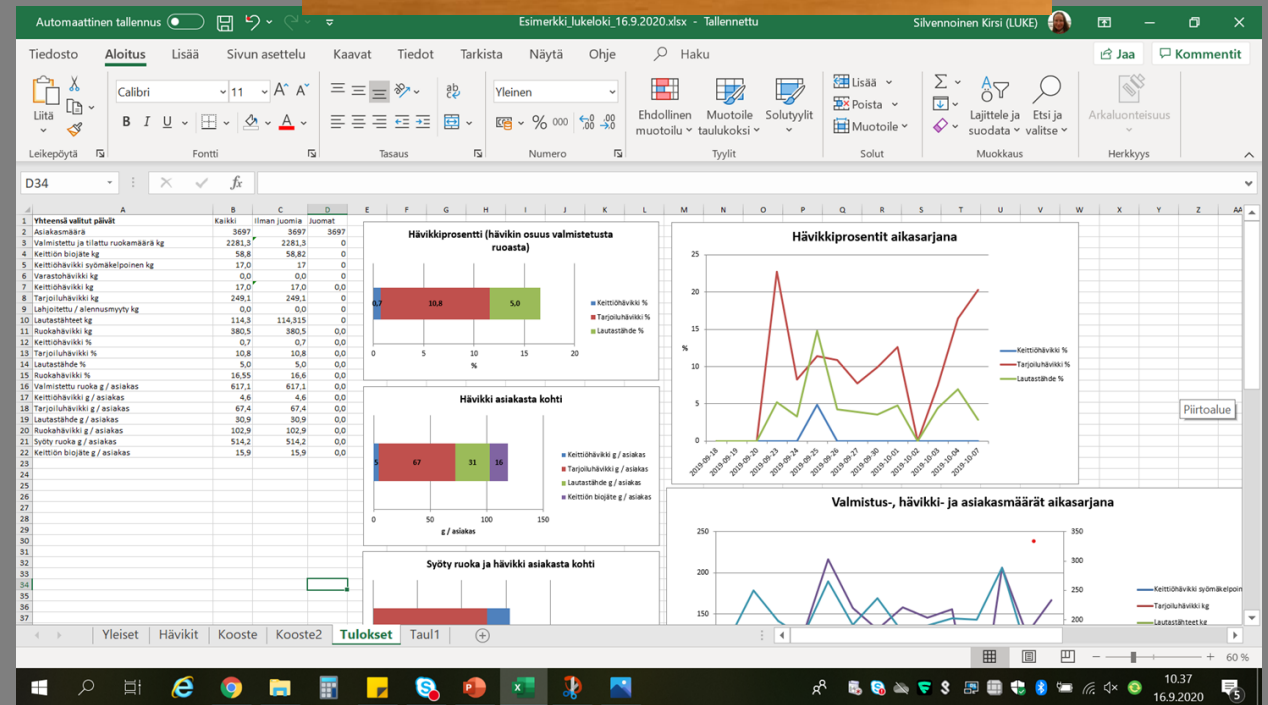
- When monitoring FW companies get up to date information on reaching their goals and can make decisions on how to reduce FW. Same time Luke will get data for research purposes.
- The application can be used with phone, tablet or computer by kitchen personnel. Food waste is logged in daily to the application by origin, and it is separated to kitchen waste, serving waste and customer plate leftovers.

<https://projects.luke.fi/ravintolafoorumi/lukeloki-2/>

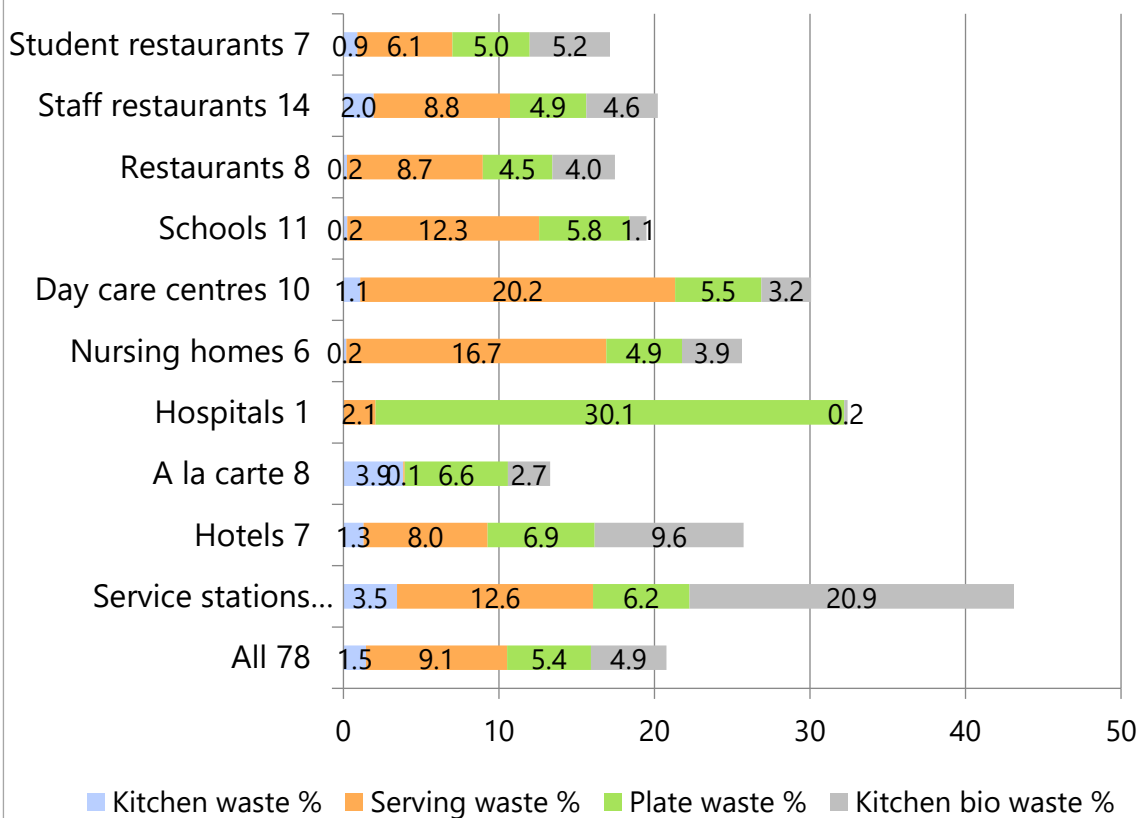


Simple and easy

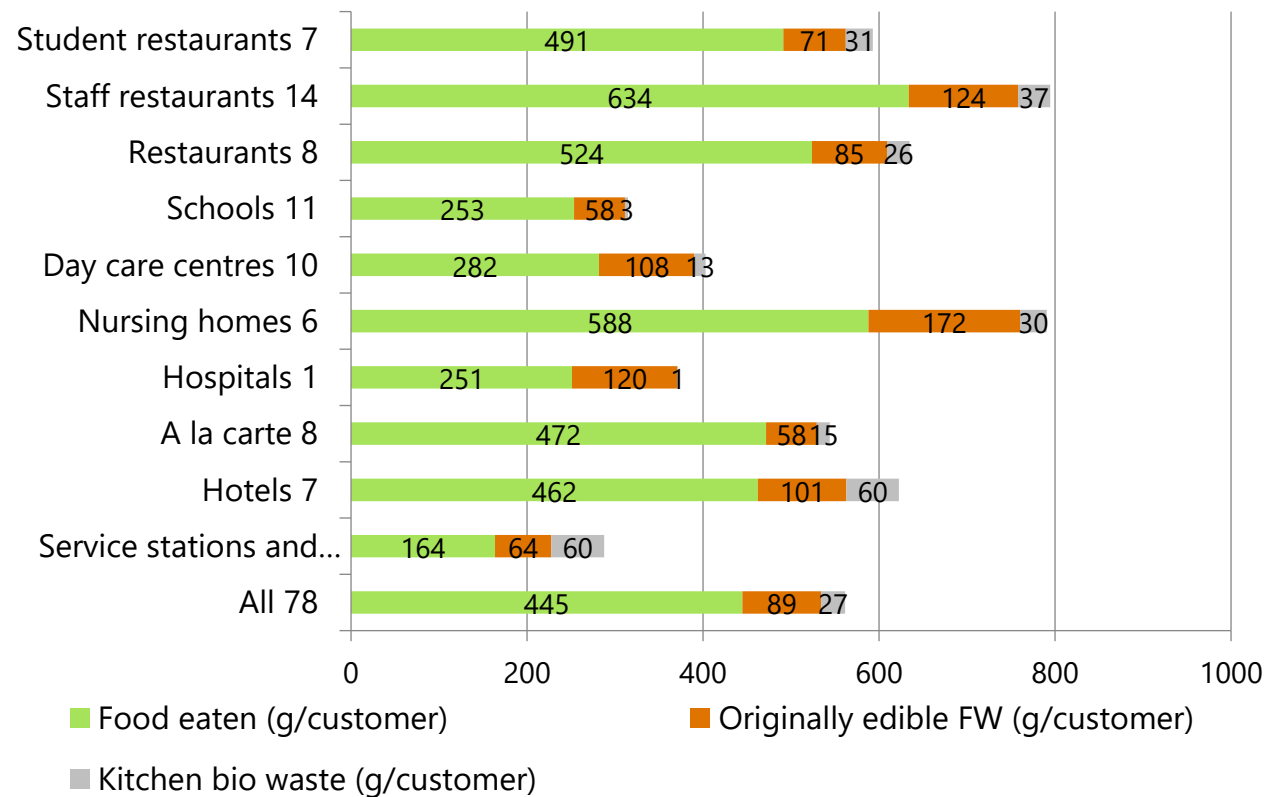
- To make daily measuring and logging easy, menus are imported to the application in advance. The monitoring system can be used in either buffet or a la carte restaurants and in outlets with both options.
- The application calculates both FW (originally edible and inedible) per kilogram of prepared food and FW per customer. The results can be used to evaluate what are the most significant sources of FW and what are the underlying reasons for it.



Food waste percentage



Food eaten, FW edible and inedible

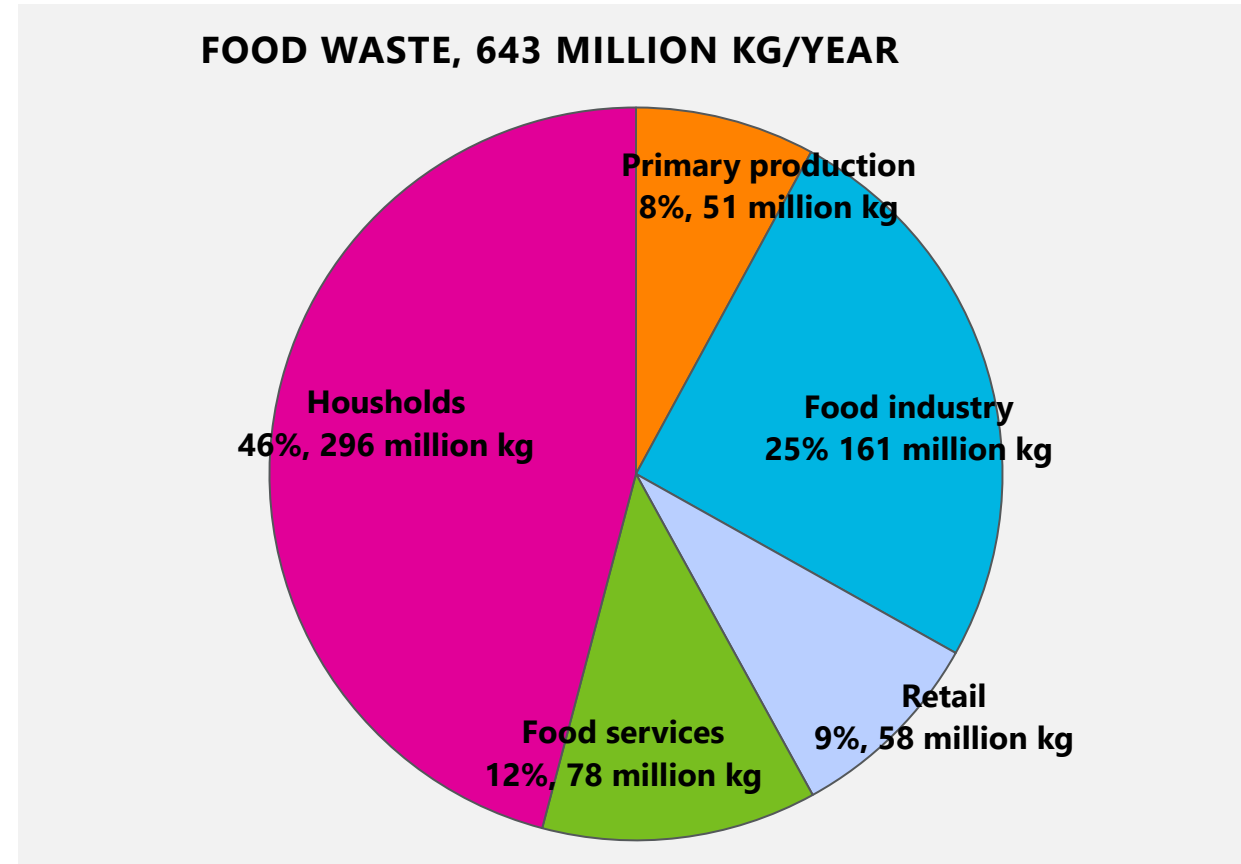
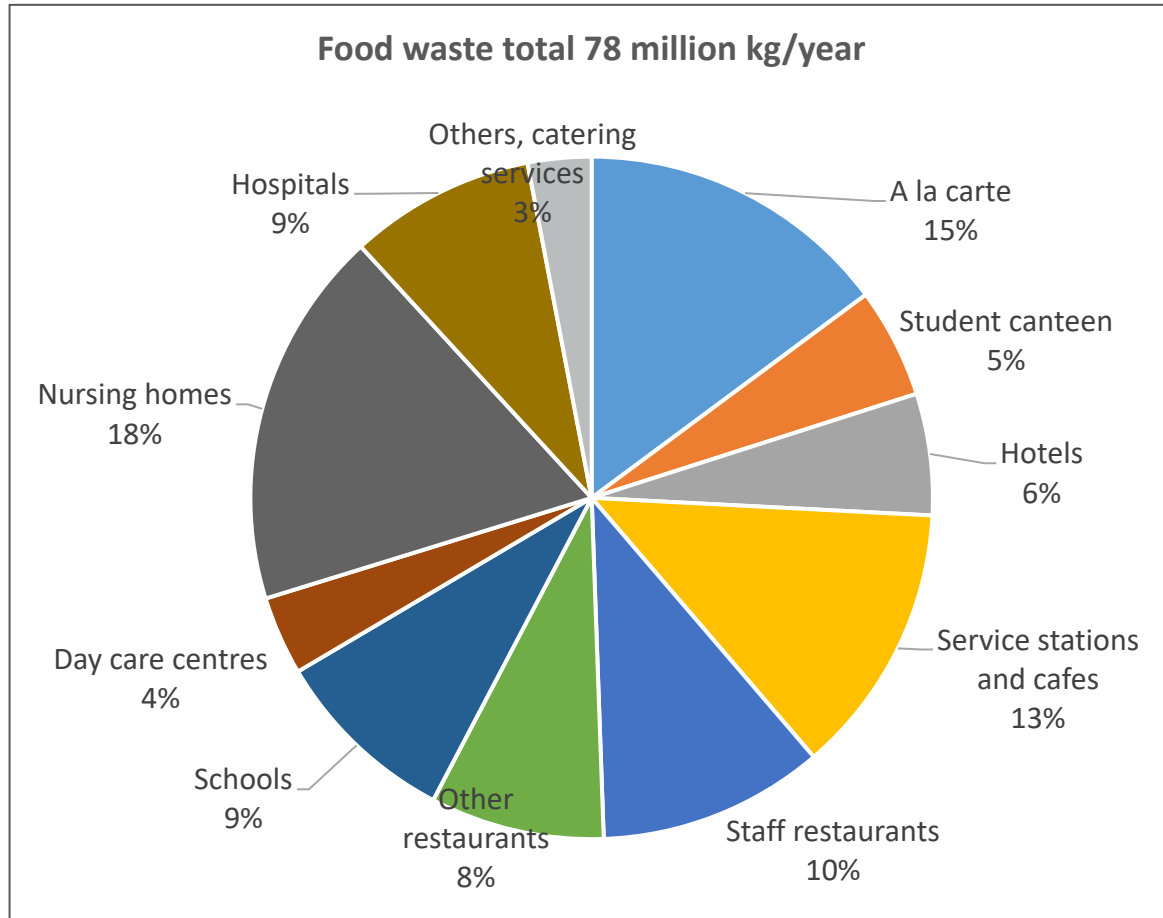


Silvennoinen, K., Nisonen, S. ja Lahti, L. 2019. Ravitsemispalveluiden elintarvikejäte : jätteen määrä 2018–2019 ja seurannan kehittäminen. Luonnonvara- ja biotalouden tutkimus 1/2020. Luonnonvarakeskus. Helsinki. 45 s.

Total amount of FW in Finnish food service companies

- The total amount of FW was estimated by supplementing the FW measurement data with statistics on annual number of prepared portions in each category of food services
- The average amount of prepared food for each category in the sample was multiplied by the corresponding number of portions to get the amount of prepared food in Finland in kg/year
- This result was again multiplied by the average FW percentage in the sample to get the amount of FW for each category
- Results from each category were added together to get the total amount of FW in Finnish food services
- According to this estimation about 364 million kg of food was prepared in Finnish food services in 2019 and about 77 million kg of it ended up as FW (edible 61 million kg).

Total food waste amount in Finland



Silvennoinen, K., Nisonen, S. ja Lahti, L. 2019. Ravitsemispalveluiden elintarvikejäte : jätteen määrä 2018–2019 ja seurannan kehittäminen. Luonnonvara- ja biotalouden tutkimus 1/2020. Luonnonvarakeskus. Helsinki. 45 s. © NATURAL RESOURCES INSTITUTE FINLAND

Riipi et al. 2021. Elintarvikejätteen ja ruokahävikin seurantajärjestelmän rakentaminen ja ruokahävikkitiekartta. Luonnonvara- ja biotalouden tutkimus 49/2021: 72 s.

Some scientific articles:

Silvennoinen, Kirsi; Nisonen, Sampsa; Pietiläinen, Oona. 2020. Food Waste in the Service Sector: Key concepts, measurement methods and best practices. In: Routledge Handbook of Food Waste. Routledge. 144-156.

Nisonen, Sampsa; Silvennoinen, Kirsi. 2020. Food waste in food services. In: Preventing food losses and waste to achieve food security and sustainability. Burleigh Dodds Series in Agricultural Science: 367-382.

Silvennoinen, Kirsi; Nisonen, Sampsa; Pietiläinen, Oona. 2019. Food waste case study and monitoring developing in Finnish food services. Waste Management 97: 97-104.

Heikkilä, Lotta; Reinikainen, Anu; Katajajuuri, Juha-Matti; Silvennoinen, Kirsi; Hartikainen, Hanna. 2016. Elements affecting food waste in the food service sector. Waste Management 56: 446-453.

Silvennoinen, Kirsi; Heikkilä, Lotta; Katajajuuri, Juha-Matti; Reinikainen, Anu. 2015. Food waste volume and origin: Case studies in the Finnish food service sector. Waste Management 46: 140-145.

Silvennoinen, Kirsi; Nisonen, Sampsa; Katajajuuri, Juha-Matti. 2022. Food waste amount, type, and climate impact in urban and suburban regions in Finnish households. Journal of Cleaner Production 378: 8 p.

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